



ANN ARBOR FIRE DEPARTMENT

Standard Operating Procedures – 2.05 Personal Protective Equipment



PERSONAL PROTECTIVE EQUIPMENT

Effective: August 6, 2021
Scheduled Review: August 6, 2024
Approved: Fire Chief Mike Kennedy

I. PURPOSE

To develop, implement, and maintain a personnel protective equipment (PPE) program and to provide for the periodic inspection, cleaning and evaluation of all protective clothing to determine its suitability for continued service.

This procedure applies to all employees required to work in hazardous environments. It is promulgated to establish procedures for the use of protective clothing and equipment to reduce the risk of illness, injury, or death that might result from an employee's exposure to a hazardous environment.

II. GENERAL

The fire chief shall designate a PPE coordinator, who will be responsible to coordinate the fire department's specification, ordering, issuance, inventory, inspection, cleaning, repair, maintenance, and retirement of PPE.

Any PPE that is found to be unsafe or in need of repair shall be tagged, removed from service immediately, and forwarded to the PPE coordinator.

Each employee shall wear protective clothing and use equipment appropriate for the hazards to which he/she encounters. Only PPE that has been issued by or approved by the fire chief shall be authorized for use on incidents. All approved PPE shall meet current industry standards.

During incident response and training evolutions, personnel shall don and wear PPE that is appropriate to the current conditions and consistent with fire department procedures. Supervisors are responsible for determining the appropriate level of PPE and ensuring that PPE is worn properly at all times.

Each employee shall properly maintain their assigned PPE. A commercial washing machine is available at Fire Station 3 to facilitate standard cleaning of assigned turnout gear and station uniforms if needed.

III. INSPECTION

Employees must be familiar with their assigned PPE. This familiarity helps employees maintain a sense of awareness when changes have occurred that might affect the equipment's performance. Turnout gear shall be carefully examined gear after each exposure to an Immediately Dangerous to Life or Health (IDLH) atmosphere, fire ground contaminants or any other encountered hazardous substances.

Some damage will be obvious, such as discoloration of the outer shell - often caused by high heat exposure resulting in the loss of dye. Rips, punctures, opened seams, and loose trim are obvious signs of wear and tear, but several types of damage may be less evident.



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The best practice for inspecting clothing is to look at its condition often and to take note of any changes. If the employee cannot determine where degradation or a harmful condition has taken place, it is best to show the clothing to the PPE coordinator.

During inspections, the following criteria shall be used to evaluate the condition of the turnout gear and equipment. Any issues or concerns shall be communicated to the PPE coordinator. Gear shall be inspected every six months and be documented in the department's asset management system.

A. Hood

- i. Inspect for tears, holes, burns, and fraying
- ii. Inspect for label markings (NFPA Compliance)
- iii. Check for proper fit (special attention to elasticity around face and facepiece)

B. Gloves (fire and extrication)

- i. Inspect for tears, holes, and fraying
- ii. Inspect for moisture barrier delaminating, tears, holes, and fraying (fire gloves)
- iii. Inspect for label markings (NFPA Compliance) (fire gloves)
- iv. Check for proper glove/coat interface (fire gloves)
- v. Check for proper fit

C. Boots

- i. Inspect leather exterior for contamination, tears, holes, fraying, weakened material, and burns/charring.
- ii. Inspect inner liner for thermal damage, moisture barrier delaminating, tears, holes, and fraying.
- iii. Inspect for label markings (NFPA Compliance).
- iv. Check for proper fit.

D. Turnout Coat

- i. Inspect outer shell for contamination, tears, holes, fraying, weakened material, and burns/charring.
- ii. Inspect inner liner for thermal damage, moisture barrier delaminating, tears, holes, and fraying.
- iii. Inspect hardware/software (snaps, zippers, Velcro) for functionality.
- iv. Inspect reflective trim for thermal damage, tears, holes, and visibility.
- v. Inspect for label markings (NFPA Compliance).
- vi. Check for proper fit.

E. Turnout Pants

- i. Inspect outer shell for contamination, tears, holes, fraying, weakened material, and burns/charring.
- ii. Inspect inner liner for thermal damage, moisture barrier delaminating, tears, holes, and fraying.
- iii. Inspect hardware/software (snaps, zippers, Velcro) for functionality.
- iv. Inspect reflective trim for thermal damage, tears, holes, and visibility.
- v. Inspect for label markings (NFPA Compliance).
- vi. Check for proper fit.



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IV. CLEANING

PPE must be kept clean to ensure its proper performance. Dirty gear carries less insulation, is more likely to conduct heat and electricity, lacks liquid shedding properties, and can become potentially flammable. Moreover, many fire ground contaminants are carcinogens and skin toxic chemicals. Turnout clothing needs to be cleaned regularly to prevent these problems. Yet, improper cleaning can also destroy clothing or worsen its protective performance.

There are two types of cleaning: routine and advanced.

- A. Routine Cleaning - Performed after any fire ground use where soiling has occurred. It involves brushing debris from the clothing, rinsing it with water, and applying spot cleaning as necessary. The condition of the clothing shall be inspected during routine cleaning. Routine cleaning may also involve using a front loading washer/extractor.

Machine Washing Procedure

- i. Do not overload the machine.
 - ii. Pre-treat if necessary.
 - iii. Fasten all closures, including pocket closures, hook and loop, snaps, zippers, and hooks.
 - iv. Only use the provided detergent.
 - v. Outer liners and inner liners shall be washed separate
 - vi. The outer liners are designed to be washed more frequently (after each exposure) and can be done without having to wash the inner liners.
- B. Advanced Cleaning - Every six (6) months, at a minimum, turnout gear shall receive advanced cleaning. Advanced cleaning, inspection, and repair shall be accomplished through a qualified contract cleaner, and coordinated through the PPE coordinator
- C. Helmet Cleaning - Helmets shall be maintained reasonably clean with proper identification in place. Flip down shields, chin strap, ear flaps and suspension shall be in good condition.
- i. Separate shroud (ear/neck protector) from helmet. Place shroud in soak bucket for 30 minutes, then spray off.
 - ii. Spray and scrub with a sponge or light duty cleansing pad with approved PPE cleaning solutions.
 - iii. Thoroughly rinse entire helmet 2-3 times.
 - iv. Heavily soiled helmets can be soaked for 30 minutes. Then scrubbed with a sponge or light duty cleansing pad if needed.
 - v. Thoroughly rinse entire helmet 2-3 times.
 - vi. Helmets shall be air dried.
 - vii. Shrouds (ear/neck protector) shall be air dried.
 - viii. Use a mild detergent with a pH level from 6.0 to 10.5.

V. BIOLOGICAL OR HAZARDOUS MATERIALS CONTAMINATION

If PPE is exposed by biological or hazardous material that cannot be mitigated with routine cleaning procedures, the employee shall utilize universal precautions when handling the personal protective equipment.



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PPE that is known or suspected to be contaminated with biological or hazardous material:

- A. Isolated
- B. Bagged (preferably a clear plastic bag)
- C. Tagged (the known or suspected biological or hazardous material shall be indicated on the tag)
- D. Notification of the PPE coordinator for cleaning.

V. **SERIOUS INJURY OR DEATH**

If an employee sustains a serious injury or death, the Incident Commander is responsible for the following “rules of evidence” involving the handling and custody of personnel protective equipment used by the employee(s) when the incident occurred.

Ensure the immediate removal from service and preservation of all PPE (clothing and equipment) utilized by the injured or deceased fire fighter(s). Custody of such PPE shall be maintained in the fire investigation evidence room.

- A. All such clothing and equipment should be non-destructively tagged and stored only in paper or cardboard containers to prevent further degradation or damage. Plastic or airtight containers shall not be used.
- B. The fire chief or his/her designee shall first approve access and review of the secured personal protective clothing and equipment by any qualified member of the organization or outside experts.
- C. The fire chief shall determine the specific period of time for retaining custody of the involved personal protective clothing and equipment.